

Claims

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217 [c1] A pressure monitoring system for a tire of an automotive vehicle comprising:
a first pressure sensor coupled to said wheel;
a pressure transmitter coupled to said pressure sensor, said transmitter
generating a pressure signal;
a controller coupled to said pressure transmitter, said controller receiving said
pressure signal and in a first stage, comparing the pressure signal to a pressure
threshold to obtain a sensor status and in a second stage, qualifying the sensor
status signal by generating a warning status in response to said sensor status.

[c2] A system as recited in claim 1 wherein the sensor status signal is an initial
pressure signal and wherein said controller qualifies the initial sensor status
signal by generating a low or flat warning status signal in response to said
initial sensor status signal indicating a respective low or flat tire pressure.

[c3] A system as recited in claim 2 wherein when the status signal is not an initial
status signal, qualifying the sensor status signal by receiving a plurality of equal
sensor status signals.

[c4] A method of operating a pressure monitoring system comprising:
transmitting a pressure signal from a tire pressure sensor; and
receiving said pressure signal in a controller;
in a first stage, comparing the pressure signal to a pressure threshold to obtain
a sensor status signal;
in a second stage, qualifying the sensor status signal by generating a warning
status in response to said sensor status.

[c5] A method as recited in claim 4 wherein the sensor status signal is an initial
sensor status signal and wherein qualifying the sensor status signal comprises
generating a low warning status signal or flat warning status signal in response
to said initial sensor status signal indicating a respective low tire pressure or
flat tire pressure.

[c6] A method as recited in claim 6 wherein when the status signal is not an initial
signal, qualifying the sensor status signal by receiving a plurality of equal

sensor status signals.

[c7] A method as recited in claim 4 wherein the pressure threshold comprises a low pressure threshold, a high pressure threshold or a flat tire pressure threshold.

[c8] A method of operating a pressure monitoring system comprising:
transmitting a plurality of pressure signals from a tire pressure sensor; and
receiving said plurality of pressure signals in a controller;
in a first stage, comparing the plurality of pressure signals to a pressure threshold to obtain a plurality of pressure status signals;
in a second stage, determining a warning status signal in response to said plurality of pressure status signals.

[c9] A method as recited in claim 8 wherein determining a warning status signal comprises qualifying the plurality of pressure status symbols by generating the warning status symbol in response to a predetermined number of said plurality of pressure status signal being equal.

[c10] A method as recited in claim 9 wherein said predetermined number is about 5.

[c11] A method as recited in claim 8 wherein said warning status comprises a high status or a not high status, a low status or a not low status, or a flat status or a not flat status.

[c12] A method as recited in claim 8 wherein determining a warning status comprises generating a first warning status in response to a predetermined number of said pressure status signals being equal within a predetermined time.

[c13] A method as recited in claim 8 further comprising generating an indication in response to said warning status signal.

[c14] A method as recited in claim 13 further wherein generating an indication comprises generating an audible signal or a visual signal.

[c15] A method of operating a pressure monitoring system comprising:
transmitting a plurality of pressure signals from a tire pressure sensor;
receiving said plurality of pressure signals in a controller;

comparing the plurality of pressure signals to a plurality of pressure thresholds to obtain a pressure status signal;
 when the pressure status signal is above a high pressure threshold, generating a first high pressure warning status signal in response to said pressure status signal;
 when the pressure status signal is below a low pressure threshold, generating a first low pressure warning status signal in response to said pressure status signal;
 when the pressure status signal is below a flat pressure threshold, generating a first flat pressure warning status signal in response to said pressure status signal;
 determining a composite warning signal in response to said high pressure warning status signal, said low pressure warning status signal, and said flat pressure status signal.

[c16] A method as recited in claim 15 further comprising when the pressure status signal is below a low pressure threshold, generating a second high pressure warning status signal.

[c17] A method as recited in claim 16 further comprising when the pressure status signal is below a flat pressure threshold, generating a second high pressure warning status signal.

[c18] A method as recited in claim 17 further comprising when the pressure status signal is below a high pressure threshold, generating a second low pressure warning status signal and a second non-flat warning status signal.

[c19] A method as recited in claim 18 wherein determining a composite warning signal comprises determining a composite warning signal in response in response to said first high pressure warning status signal, said second high pressure warning status signal, said first low pressure warning status signal, said second low pressure warning status signal, said first flat pressure status signal, and said second flat pressure status signal.

[c20] A method as recited in claim 19 wherein said composite signal comprises a

sensor status signal.